

ABSTRACT OF THE DISCLOSURE

An instrument for testing fluid characteristics has a vial and a housing. The vial defines a chamber for receiving a sample of the fluid and has a cap for sealing the fluid therein. The housing defines a recess for receiving the vial. Multiple light emitting diodes and photovoltaic detectors are arranged on multiple meridional planes within the housing. The meridional planes each intersect approximately at a central axis of the chamber when the vial is placed within the recess. Modulation of the light emitting diodes and tuned processing electronics allow for simultaneous evaluation of sample characteristics such as spectral transmittance, turbidity and fluorescence. The user selects particular tests via a keypad and a display indicates the results of the chosen analysis.